

Claims

1. A device to remove or recover by-products formed during processing of a gaseous effluent containing at least hydrogen sulfide (H_2S) and sulfur dioxide (SO_2) wherein a solvent and a catalyst are used, said device comprising at least one contactor reactor, at least one separation zone, several lines for delivery of at least the gas to be processed and of a fluid comprising a solvent and a catalyst, lines for extraction of at least a cleaned gas and of a fluid containing at least solvent and by-products, means for extracting an essentially liquid fraction F comprising at least solid by-products, said extraction means being connected to a layer of solid by-products in the separation zone, and at least one zone for processing said fraction F.
2. A device as claimed in claim 1, characterized in that said separation zone and said extraction means are situated in the lower part of said contactor reactor.
3. A device as claimed in claim 1, characterized in that said extraction means are arranged on a line connecting said contactor reactor and said separation zone.
4. A device as claimed in claim 1, characterized in that processing zone comprises at least one of the means for producing at least one stream essentially comprising solvent and at least one stream comprising most of the by-products formed selected from the group consisting of:
 - demixing means,
 - filtering means, and
 - capture means.
5. A device as claimed in claim 1, characterized in that it comprises at least means (C_{N2} , V_2) for controlling the thickness and/or means (C_{N1} , V_1) for controlling the position of the layer of by-products, or control means (V_1 , V_2).

6. A device as claimed in claim 1, characterized in that it comprises a line allowing to recycle at least part of stream F_2 essentially consisting of solvent and/or part of the solvent separated from the liquid sulfur to contactor reactor.
7. A device as claimed in claim 1, characterized in that it comprises means for sulfur desaturation of said part of stream F_2 and/or of said part of the solvent separated from the liquid sulfur.
8. A device as claimed in claim 1, characterized in that said contactor reactor is selected from the group consisting of a reactor with random or stacked packing, a static mixer SMV, an impactor, a hydro-ejector, an atomizer, and a wire contactor.
9. A device as claimed in claim 1, wherein said device is connected to a Claus plant processing H_2S from natural gas scrubbing operation or crude oil refining operations, and said gaseous effluent is an effluent of the Claus plant.

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